

Appl. No. 09/447,301
Amdt. Dated December 24, 2003
Reply to Office Action of July 24, 2003

IN THE CLAIMS:

Please amend the claims as follows:

1. (Currently Amended) A solid-state image-pickup device having:
a sensor array comprising a plurality of sensors; and
a plurality of transfer registers for transferring signal charges from said sensors of said sensor array,

at least one horizontal-horizontal transfer register is formed between said transfer registers for storing and transferring said signal charges;

wherein an accumulation gate is provided between said sensor array and said transfer registers for reading out signal charges from said sensors at the a same time, accumulating said signal charges and allocating said signal charges to said transfer registers ~~is provided between said sensor array and said transfer registers.~~

2. (Original) A solid-state image-pickup device according to claim 1, further comprising a read-out gate provided between said array of sensors and said accumulation gate.

3. (Currently Amended) A solid-state image-pickup device according to claim 1, wherein said accumulation gate ~~sets~~ creates a difference in electric potential oriented in a direction of transfer ~~a transfer direction~~.

4. (Currently Amended) A solid-state image-pickup device according to claim 1 wherein signal charges of said sensors are ~~accumulated~~ stored in said accumulation gate to be allocated in units of electrical charge each originated by one of said sensors.

5. (Currently Amended) A solid-state image-pickup device according to claim 1 wherein signal charges of said sensors are allocated to ~~said~~ respective transfer registers for

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each odd sensor and each even sensor of said sensor array.

6. (Currently Amended) A method of driving a solid-state image-pickup device having:
a sensor array comprising a plurality of sensors;
a plurality of transfer registers for transferring signal charges from said sensors of said
sensor array; and

at least one horizontal-horizontal transfer register formed between said transfer
registers for storing and transferring said signal charges;

an accumulation gate provided between said sensor array and said transfer registers,
said method comprising the steps of:

reading out signal charges from all of said sensors in a row closest to said accumulation
gate at the a same time;

allocating said signal charges of said sensors from said accumulation gate to said
transfer registers; and

driving said transfer registers to output said signal charges.

7. (Original) A method of driving a solid-state image-pickup device according to claim
6 whereby said transfer registers are driven at the same time.

8. (Currently Amended) A method of driving a solid-state image-pickup device
according to claim 6 whereby signal charges of said sensors are allocated to said respective
transfer registers for each odd sensor and each even sensor of said sensor array.

Please add the following new claims:

9. (New) The solid-state image-pickup device according to claim 1, wherein said
horizontal-horizontal transfer register has a same number of columns as said transfer
registers.

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10. (New) The method of driving a solid-state image-pickup device according to claim 6, wherein said horizontal-horizontal transfer register has a same number of columns as said transfer registers.

11. (New) The solid-state image-pickup device according to claim 2, said accumulation gate and said read-out gate share a common gate electrode.

12. (New) The method of driving a solid-state image-pickup device according to claim 6, wherein said step of reading out and said step of allocating are carried out through a common gate electrode.
